Paper No. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

_____

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

_____

Ex parte CHRISTOPHER W. SHAW, GORAN DEVIC
and EVAN LELAND

_____

Appeal No. 2002-1448
Application 09/067,321

_____

ON BRIEF

_____

Before FLEMING, GROSS, and BLANKENSHIP, **Administrative Patent Judges.**

FLEMING, **Administrative Patent Judge.**

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1 through 19 and 21 through 27, all the claims pending in the instant application. Claim 20 has been canceled.

Invention

The invention relates to the field of computer controlled graphics display systems. In particular, the invention relates

to computer controlled graphics display systems utilizing texture mapping and lighting graphics techniques. Computer controlled graphics systems are used for displaying graphics objects on a display. These graphics objects may comprise graphics primitive elements which include points, lines, polygons, etc. In the process of rendering 3D graphics, many techniques are used to create realistic 3D effects. One of the techniques is texture mapping. See page 1 of Appellants' specification. Generally, texture mapping occurs by accessing encoded surface detail points or "texels" from a texel map memory space. See pages 1 and 2 of Appellants' specification. Figure 4 is a flow diagram 300 illustrating a method of displaying graphics images on display screen 105 in accordance with the Appellants' invention. The Appellants' invention includes a specialized "texel light" code or "bit" mapped into the texel data which is used by the lighting processes of the present invention. The "texel light" codes allow the present invention to apply a given lighting condition to regions of texture data in a non-uniform manner within a graphics primitive. See page 13 of Appellants' specification. At step 320, of Figure 4, the current graphics primitive is rasterized into a plurality of pixels, each pixel having a respective (x,y) display coordinate. At step 325, the current

polygon is texture mapped. As described above, "texel light" codes are placed within the texels of the texture map data accessed by step 325. The "texel light" codes control the way in which lighting is performed on a texel by texel basis. At step 330, lighting is added to the pixels of the current polygon. See page 14 of Appellants' specification.

Independent claim 1 is representative of Appellants' claimed invention and is reproduced as follows:

1. In a computer controlled graphics display system, a method of displaying a graphics image, said method comprising the steps of:

accessing a memory to obtain a graphics primitive,

translating the graphics primitive into a plurality of pixels, each of the plurality of pixels having a two-dimensional display coordinate, and

displaying the graphics primitive on a display screen, said step of displaying comprising the steps of:

for each respective pixel, obtaining from a texture map a corresponding texel, the corresponding texel comprising a control code and a color value and having a two-dimensional texel coordinate,

for each corresponding texel, when the control code is of a first value, selectively performing a lighting operation to modify the color value of the corresponding texel based on a lighting condition, and bypassing said lighting operation for the corresponding texel when the control code is of a second value, and

displaying each of the respective pixels on the display screen with the color value of the corresponding texel.

Reference

The reference relied on by the Examiner is as follows:

Elliot et al. (Elliot) Inside 3D Studio MAX 2 Volume 1 "Chapter 15 Map Channels, Map Types, and More Material Types" New Riders Publishing. Indianapolis, IN., March, 1998, pp. 647-648

Rejections at Issue

Claims 1, 3 through 7, 9 through 14, 16 through 19, 21 and 23 through 27 stand rejected 35 U.S.C. § 103 as being unpatentable over Elliot.

Claims 2, 8, 15 and 22 stand rejected under 35 U.S.C. § 103 as being unpatentable over Elliot in view of the admitted prior art.[1]

OPINION

With full consideration being given to the subject matter on appeal, the Examiner's rejections and the arguments of the Appellants and Examiner, for the reasons stated **infra**, we reverse the Examiner's rejection of claims 1 through 19 and 21 through 27 under 35 U.S.C. § 103.

[1] The rejection under 35 U.S.C. § 112, second paragraph, has been withdrawn by the Examiner. See pages 2 and 4 of the Examiner's answer.

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of establishing a **prima facie** case of obviousness. **In re Oetiker**, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). **See also In re Piasecki**, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). The Examiner can satisfy this burden by showing that some objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art suggests the claimed subject matter. **In re Fine**, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the Appellants. **Oetiker** 977 F.2d at 1445, 24 USPQ2d at 1444. **See also Piasecki**, 745 F.2d at 1472, 223 USPQ at 788.

An obviousness analysis commences with a review and consideration of all the pertinent evidence and arguments. "In reviewing the [E]xaminer's decision on appeal, the Board must necessarily weigh all of the evidence and argument." **In re Oetiker, 977 F.2d at 1445, 24 USPQ2d at 1444.** "[T]he Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning

by which the findings are deemed to support the agency's conclusion." **In re Lee**, 277 F.3d 1338, 1344, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002).

Appellants argue that Elliot does not teach or suggest a texel map comprising texels each having a color value, a two-dimensional texel coordinate and a control code. Appellants point out that Appellants' claim 1 recites "for each respective pixel, obtaining from a texture map a corresponding texel, the corresponding texel comprising a control code and a color value and having a two-dimensional texel coordinate." See pages 12 and 13 of the brief.

We note that independent claims 7, 14 and 21 recite similar language as quoted above for claim 1. Thus, we find that all of the claims before us require this limitation.

We note that the Examiner states that Elliot does not specifically disclose a method comprising the use of a control code stored with the texel color data to selectively enable or disable the application of a lighting condition to texel data for a graphics primitive when rendering the primitive. See page 5 of the Examiner's answer. The Examiner argues that it would have been obvious to one of ordinary skill in the art to derive the

limitations recited in Appellants' claims because storing a control code is the most efficient way to enable or disable the application with an operation. See page 5 of the Examiner's answer.

As noted above, our reviewing court requires the requisite findings based upon the evidence of record. It is the Examiner's burden of showing the objective teachings in the prior art. We note that the Examiner has not pointed to any objective teachings in the prior art for support for why one of ordinary skill in the art would make the modification to the Elliot graphical system. Without the necessary evidence, we find that the Examiner has not met the burden of coming forward with the evidence of establishing a **prima facie** case of obviousness.

In view of the foregoing, we have not sustained the Examiner's rejection of claims 1 through 19 and 21 through 27 under 35 U.S.C. § 103.

REVERSED

MICHAEL R. FLEMING Administrative Patent Judge	)	
ANITA PELLMAN GROSS Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
HOWARD B. BLANKENSHIP Administrative Patent Judge	)	

MRF:pgc

Cirrus Logic Inc.
Legal Department MS 521
3100 West Warren Avenue
Fremont, CA 94538-6419